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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,391	09/16/2005	Mehmet Kutlugil	PHDL0900-001	5165
26948	7590	12/07/2006	EXAMINER	
VENABLE, CAMPILLO, LOGAN & MEANEY, P.C.			AMAYA, CARLOS DAVID	
1938 E. OSBORN RD			ART UNIT	
PHOENIX, AZ 85016-7234			PAPER NUMBER	
			2836	

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/520,391	Applicant(s) KUTLUGIL, MEHMET	
	Examiner Carlos Amaya	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 10-12, 18 and 19 is/are rejected.
- 7) ☒ Claim(s) 5-9, 13-17 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>05/02/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-4, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salisbury (US 5,548,481) in view of Sagues (US 4,557,225).

With respect to claim 1,10 Salisbury discloses an electronic switching module that can directly be mounted instead of an electromagnetic DC relay used in various vehicles (Salisbury disclose connector assembly 52 to allow the electronic module 10 to be connected to external circuitry, col. 3 lines 51-53; Salisbury also discloses that the devices are used in an under hood automobile environment); the electronic switching module comprising a plastic casing (protective cover 32, fig. 1) protecting said electronic switching module against the external environmental conditions, an electronic circuit (electrical components 28 and high heat producing components 38 form an electronic circuit); and a printed circuit card (printed circuit board 22) on which the electronic circuit elements are arranged (as shown in the figures the components 28 and 38 are arranged in the printed circuit board); an aluminum block (Salisbury discloses, col. 4 lines 3-6 that a heat sink 12 is made of high thermal conductive material, such as metal) closing the periphery of the electronic circuit and preventing over-heating of the electronic circuit (as shown in figure 1 the electronic circuit is enclosed by heat sink 12

Art Unit: 2836

and cover 32), a cover (connector assembly 52 serves as a cover for the circuit card 22 as shown in figure 3) wherein said printed circuit card is placed and contacts (connector pins 44) that are mounted to the cover to provide the connection to the power circuit (as shown in figure 3 connector assemble 52 comprises connector pins 44 to connect the circuit board with external circuitry).

Salisbury, however does not disclose expressly a drive circuit and a semiconductor switch.

Sagues discloses that heat-producing elements are transistors and drivers col. 7 lines 63-68, col. 8 lines 1-9.

It would have been obvious at the time the invention was made to have included transistors and drivers in the invention disclosed by Salisbury, as disclosed by Sagues. Sagues teaching is used to show that heat-producing elements can be circuit devices including transistor and drivers, as its well known in the art.

The suggestion or motivation for doing so would have been to obtain a predetermined circuit that includes transistor and drivers for a predetermined function as desired by a designer.

With respect to claim 3,11 Salisbury in view of Sagues disclose the electronic switching module according to claim 1, wherein the aluminum block (Salisbury aluminum block 12) is a prismatic aluminum block with fins provided on it, in order to transfer to the outside the heat created in the circuitry more rapidly (as shown in the figures the aluminum block is provided with fins 30 to transfer heat; the aluminum block

Art Unit: 2836

12 and cover 32 are enclosing the circuits to provide heat transfer as shown in the figures the block 12 and cover 32 are of prismatic shape).

With respect to claim 4, 12 Salisbury in view of Sagues disclose the electronic switching module according to claim 1, wherein the contacts (6) are adapted to be placed in the contact guides of the previously used electromagnetic relay, without requiring any modifications. Salisbury discloses connector pins 44; one could make the connectors 44 to fit in predetermine contacts.

3. Claim 2, 18-19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Salisbury (US 5,548,481) and Sagues (US 4,557,225) in view of Cipolla (US 5,268,815).

With respect to claim 2 Salisbury and Sagues disclose the electronic switching module according to claim 1, except for the plastic casing provided with a row of perforations, to allow heat transfer. Cipolla discloses (Cipolla inventions is being used only to show that perforations/apertures are provided on a casing for further assisting a heat sink) cover plates 34 and 36 to cover a circuit card 42; Cipolla discloses a plurality of apertures 22, for airflow into the system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add perforations/apertures to a casing of an electronic device.

The suggestion or motivation for doing so would have been to assist the cooling element in the electronic system by supplying airflow.

With respect to claim 18 Salisbury discloses an electronic switching module that can directly be mounted instead of an electromagnetic DC relay used in various vehicles (Salisbury discloses connector assembly 52 to allow the electronic module 10 to

Art Unit: 2836

be connected to external circuitry, col. 3 lines 51-53; Salisbury also discloses that the devices are used in an under hood automobile environment); the electronic switching module comprising a plastic casing (protective cover 32, fig. 1) protecting said electronic switching module against the external environmental conditions and a printed circuit card (printed circuit board 22) on which the electronic circuit elements are arranged (as shown in the figures the components 28 and 38 are arranged in the printed circuit board); an aluminum block (Salisbury discloses, col. 4 lines 3-6 that a heat sink 12 is made of high thermal conductive material, such as metal) closing the periphery of the electronic circuit and preventing over-heating of the electronic circuit (as shown in figure 1 the electronic circuit is enclosed by heat sink 12 and cover 32) and wherein the aluminum block (Salisbury aluminum block 12) is a prismatic aluminum block with fins provided on it, in order to transfer to the outside the heat created in the circuitry more rapidly (as shown in the figures the aluminum block is provided with fins 30 to transfer heat; the aluminum block 12 and cover 32 are enclosing the circuits to provide heat transfer as shown in the figures the block 12 and cover 32 are of prismatic shape) a cover (connector assembly 52 serves as a cover for the circuit card 22 as shown in figure 3) wherein said printed circuit card is placed and contacts (connector pins 44) that are mounted to the cover to provide the connection to the power circuit (as shown in figure 3 connector assembly 52 comprises connector pins 44 to connect the circuit board with external circuitry).

Salisbury, however does not disclose expressly a drive circuit and a semiconductor switch, and that the casing is provided with row of perforations to allow heat transfer.

Sagues discloses that heat-producing elements are transistors and drivers col. 7 lines 63-68, col. 8 lines 1-9. Cipolla discloses (Cipolla inventions is being used only to show that perforations/apertures are provided on a casing for further assisting a heat sink) cover plates 34 and 36 to cover a circuit card 42; Cipolla discloses a plurality of apertures 22, for airflow into the system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Sagues with the heat producing elements with the casing with apertures disclosed by Cipolla.

The suggestion or motivation for doing so would have been to provide assistance to the heat sink disclosed by Salisbury in getting rid of the heat produced by the heat producing elements.

With respect to claim 19 Salisbury in view of Sagues in further view of Cipolla disclose the electronic switch module according to claim 18, wherein the contacts (6) are adapted to be placed in the contact guides of the previously used electromagnetic relay, without requiring any modifications. Salisbury discloses connector pins 44; one could make the connectors 44 to fit in predetermine contacts.

Allowable Subject Matter

4. Claims 5-9, 13-17, 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 5, 13 and 20 are allowable over the prior art of record, because the prior art of record does not disclose that "the electronic circuit comprises the drive circuit (7) comprising a triggering DC source (8); a resistance (R10), a LO (14), a diode (Q10) and a second resistance (R11) all connected in series to said source and a capacitor (C10) connected in parallel to all these, and a chassis (frame) (13); a transistor (3) which is connected to the drive circuit (7) from its inlet (gate) end (9); a resistance (R12), the DC source (drain) (10) end of the transistor (3) of which is connected to the source (11) end of the transistor; and a load (L10)".

Claims 6 and 14 are allowable over the prior art of record, because the prior art of record does not disclose that "the electronic circuit comprises the drive circuit (7) comprising a resistance (R20) connected in series to a triggering DC source, a transistor (T20) and diode (Q20) connected to each other in parallel which are in turn connected to said resistance in series, a frame (13) connecting them to the ground and a diode (Q21) connected in series to them; a diode (Q22), a transistor (10) and a resistance (R21) connected to each other in parallel which are in turn connected to said driving circuit (7) in series, a triggering DC source (8) feeding said circuit and a diode (Q23) and a load (L20) connected to each other in parallel, which connect them to the frame (13)".

Claims 7 and 15 are allowable over the prior art of record, because the prior art of record does not disclose that "the electronic circuit comprises a transistor (10) and two resistances (R31, R32) connected to each other in parallel which are in turn connected to said resistance, and a frame (13) which connects the above components to the ground".

Claims 8 and 16 are allowable over the prior art of record, because the prior art of record does not disclose that "the printed circuit card (4) comprises an electronic circuit wherein more than one LO and more than one simultaneously operating transistor, are used in order to obtain higher current values in the power circuit".

Claims 9 and 17 are allowable over the prior art of record, because the prior art of record does not disclose that "the electronic circuit comprises a single drive circuit including simultaneously operating LO's and more than one power circuit activated by being connected in parallel, wherein said module is used as a switch".

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

Art Unit: 2836

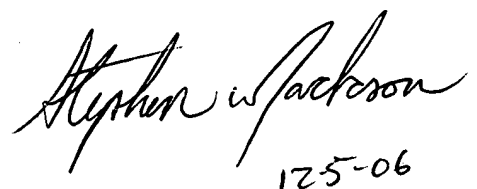
shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Amaya whose telephone number is (571) 272-8941. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CA



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STEPHEN W. JACKSON
PRIMARY EXAMINER